West Nile Virus and Other Mosquito-borne Disease Report

August 26 – September 1, 2018 (Report Week 35)

West Nile Virus

Canada

Human

During surveillance week 35, ending on September 1, 2018, the Public Health Agency of Canada was informed of three additional West Nile virus (WNV) infections: one in Manitoba and two in Ontario.

As of week 35, a total of sixty clinical cases of WNV have been reported by the following four provinces: Alberta (5), Manitoba (16), Ontario (32), and Québec (7). Of these, twenty-two (37%) have been classified as WNV neurological syndrome, eighteen (30%) as WNV non-neurological and twenty (33%) are unspecified. Three deaths have been reported. In addition, fifteen WNV asymptomatic infections have been reported: three in Alberta, seven in Manitoba, two in Ontario and three in Québec.

Mosquito

To date (week 35), the PHAC has been notified of 14,201 mosquito pools tested for WNV: Saskatchewan (751), Manitoba (1,880), Ontario (10,327) and Québec (1,243). Of these, a total of 511 (3.60%) have tested positive for WNV: forty-nine in Saskatchewan, 167 in Manitoba, 261 in Ontario, and thirty-four in Québec.

Wild Bird

To date (week 35), seventy-one out of 129 dead wild birds have tested positive for WNV by the Canadian Wildlife Health Cooperative (CWHC) and Manitoba Agriculture: three in Saskatchewan, fourteen in Manitoba, twenty-five in Ontario, and twenty-nine in Québec. In addition, four live birds in Québec have been tested positive for WNV by the University of Montréal.

Equine

The Canadian Food Inspection Agency (CFIA) has reported fifty-three horses with West Nile fever in the following five provinces: Alberta (27), Saskatchewan (18), Manitoba (6), Ontario (1), and Québec (1).

United States and U.S. territories

As of September 4th, 559 human cases of WNV have been reported to the US Centers for Disease Control and Prevention (CDC). Of these, 312 (56%) were classified as neuroinvasive disease and 247 (44%) as non-neuroinvasive disease. Eighteen deaths have been reported. In addition, 136 presumptive viremic blood donors have been identified.

Europe and Neighboring Countries

As of September 6th, 1,112 human cases of West Nile fever have been reported to the European Centre for Disease Prevention and Control. Seventy-one deaths have been reported. (Weekly updates: 2018 West Nile fever transmission season)

Other Mosquito-borne Diseases in Canada

Eastern Equine Encephalitis virus

The CFIA has reported six horses testing positive for Eastern Equine Encephalitis virus (EEEV) in Ontario. No human cases of EEEV have been reported to the PHAC during the 2018 season.

California Serogroup virus

Since May 1, 2018, fifteen human cases/exposures of California serogroup virus have been reported by the National Microbiology Laboratory in the following five provinces: Alberta (1), Saskatchewan (2), Ontario (4), Quebec (7) and New Brunswick (1). Of the 15 cases, nine were further typed as Jamestown Canyon virus, and two as Snowshoe hare virus.

FIGURE 1: Geographic distribution of WNV human clinical cases and asymptomatic infections in Canada, 2018

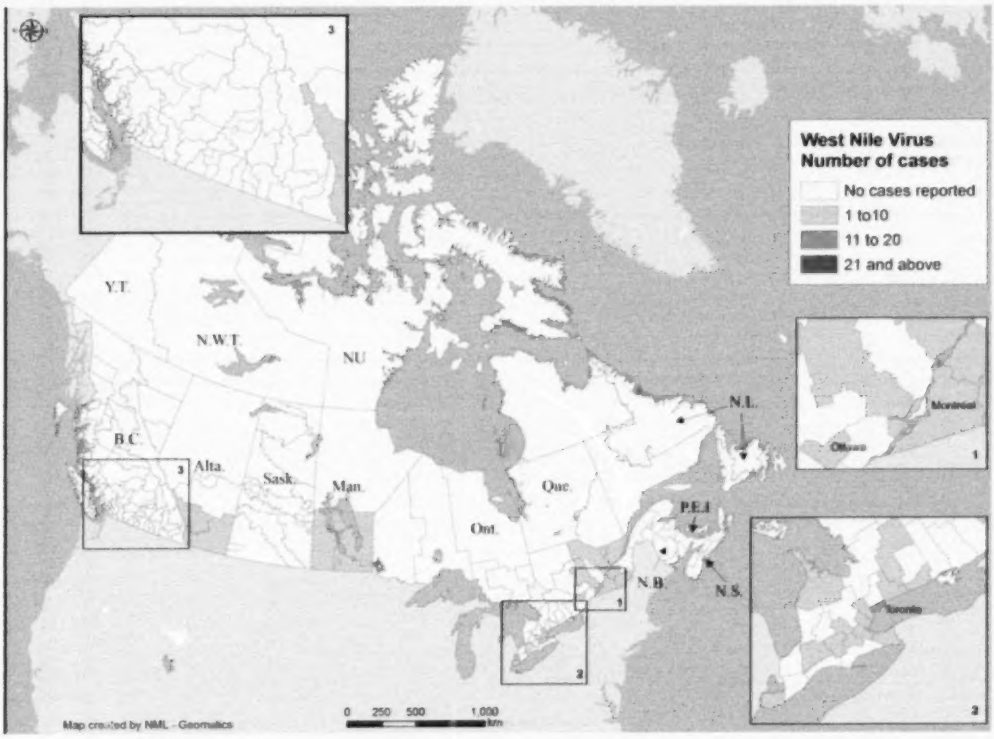
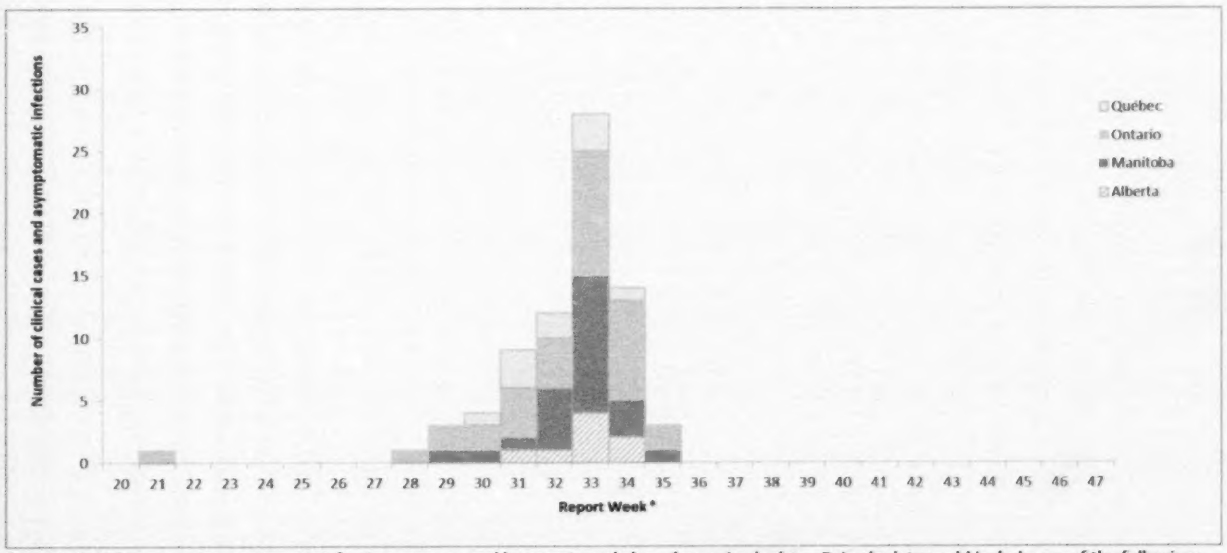
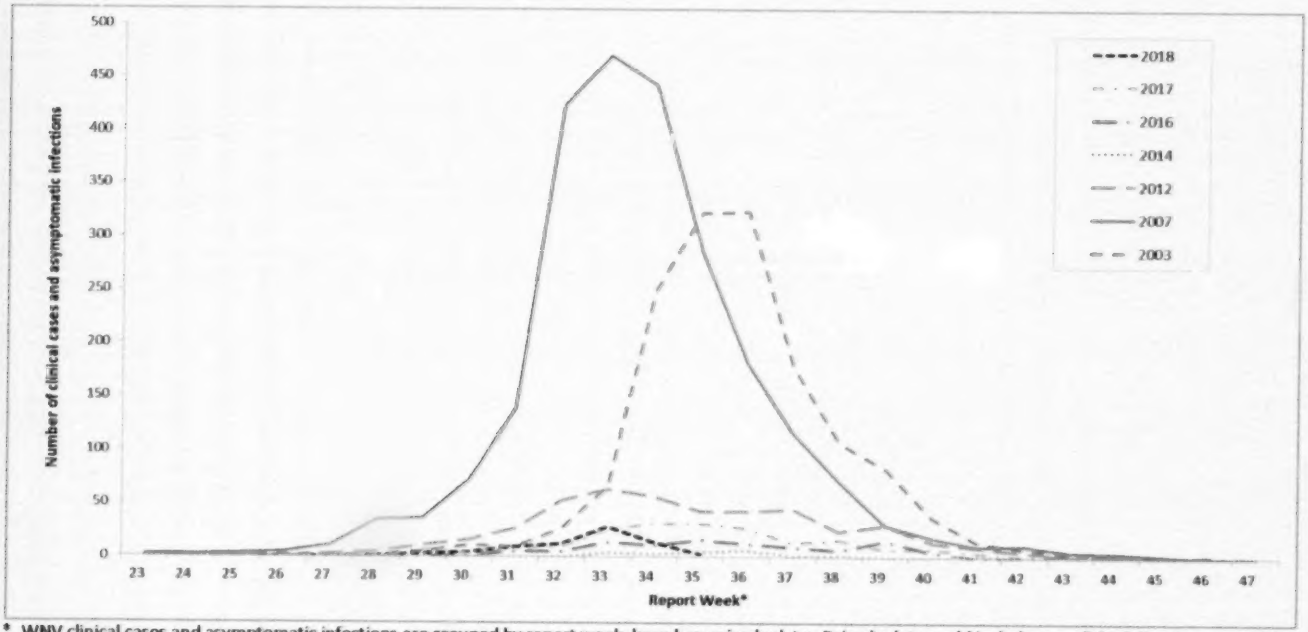


FIGURE 2: WNV human clinical cases and asymptomatic infections in Canada by report week, 2018



* WNV clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

FIGURE 3: WNV human clinical cases and asymptomatic infections for selected years by report week, in Canada



* WNV clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

TABLE 1: WNV human clinical cases and asymptomatic infections in Canada by report week* and year to date, 2018

Province/Territory	Clinical Cases				Total travel-related cases[2]	Total asymptomatic infections[3]
	Neurological syndrome	Non-neurological syndrome	Unclassified/ Unspecified	Total clinical cases[1]		
Report week 35: August 26 to September 1, 2018						
British Columbia	0	0	0	0	0	0
Alberta	0	0	0	0	0	0
Saskatchewan[4]	0	-	-	0	-	-
Manitoba	0	0	1	1	0	0
Ontario	1	0	1	2	0	0
Québec	0	0	0	0	0	0
Newfoundland and Labrador	0	0	0	0	0	0
Prince Edward Island	0	0	0	0	0	0
Nova Scotia	0	0	0	0	0	0
New Brunswick	0	0	0	0	0	0
Yukon Territory	0	0	0	0	0	0
Northwest Territory	0	0	0	0	0	0
Nunavut	0	0	0	0	0	0
Total	**1**	**0**	**2**	**3**	**0**	**0**
Year to date: January 1 to September 1, 2018						
British Columbia	0	0	0	0	0	0
Alberta	1	4	0	5	2	3
Saskatchewan[4]	0	-	-	0	-	-
Manitoba	3	3	10	16	0	7
Ontario	14	9	9	32	2	2
Québec	4	2	1	7	1	3
Newfoundland and Labrador	0	0	0	0	0	0
Prince Edward Island	0	0	0	0	0	0
Nova Scotia	0	0	0	0	0	0
New Brunswick	0	0	0	0	0	0
Yukon Territory	0	0	0	0	0	0
Northwest Territory	0	0	0	0	0	0
Nunavut	0	0	0	0	0	0
Total	**22**	**18**	**20**	**60**	**5**	**15**

* WNV clinical cases and asymptomatic infections are grouped by report week, based on episode date. Episode date could include one of the following: onset date, diagnosis date, lab sample date or reporting date.

[1] Total clinical cases are the sum of confirmed and probable: WNV neurological and non-neurological syndromes, along with any unclassified or unspecified cases.

[2] Likely related to travel outside the Province/Territory. These cases are included in either the total clinical cases or WNV asymptomatic infections.

[3] Satisfies WNV diagnostic test criteria in the absence of clinical criteria. This category could include asymptomatic blood donors whose blood is screened using a nucleic acid amplification test, by blood operators (i.e. Canadian Blood Services or Hema-Québec) and is subsequently brought to the attention of public health officials. Blood operators in Canada perform a supplementary WNV specific nucleic acid amplification test following any positive donor screen test result.

[4] Saskatchewan provides counts of WNV neurological syndrome cases only.

TABLE 2: WNV mosquito surveillance* in Canada, as of September 1, 2018

Province	Number of positive mosquito pools	Number of mosquito pools tested	Percentage of positive mosquito pools (%)
Saskatchewan	49	751	6.52
Manitoba	167	1,880	8.88
Ontario	261	10,327	2.53
Québec	34	1,243	2.74
Total	**511**	**14,201**	**3.60**

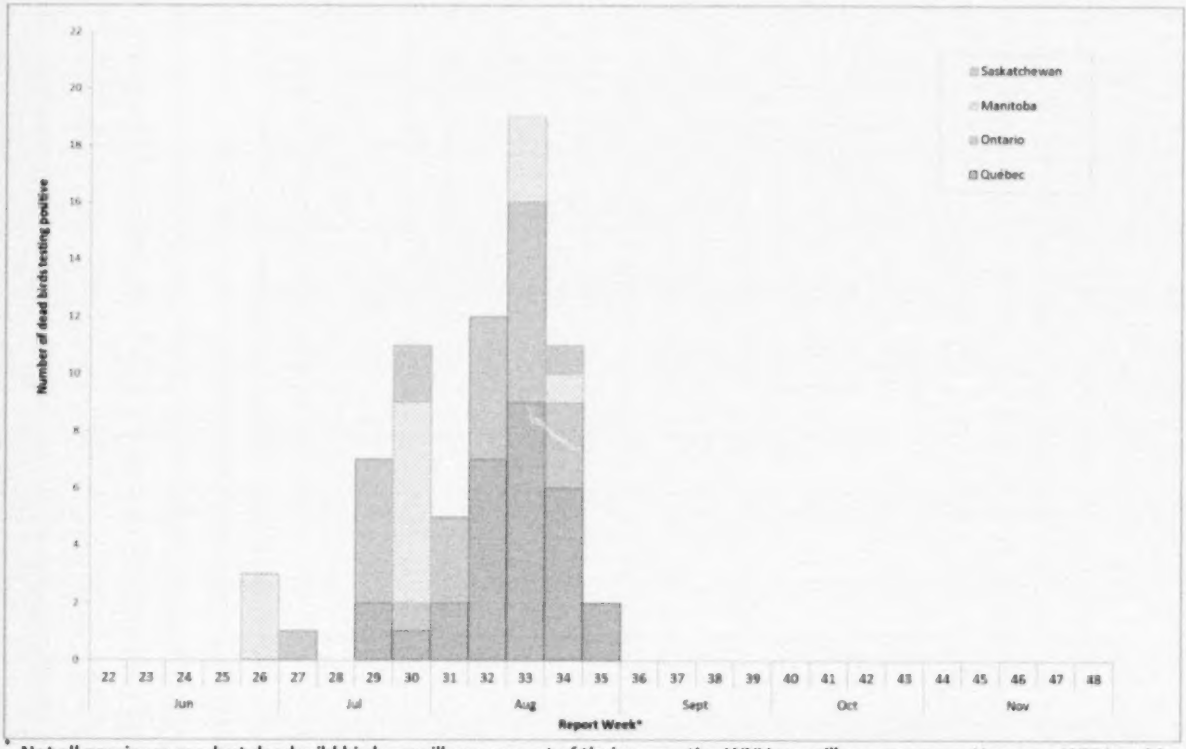
*Mosquito surveillance data is reported by the following four provinces: Québec, Ontario, Manitoba, and Saskatchewan.

TABLE 3: Total number of WNV mosquito pools tested by report week and by province/ territory, 2018†

Province	Report Week														
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	Total
Saskatchewan	0	15	18	17	45	55	90	104	96	106	62	65	52	26	**751**
Manitoba	15	39	89	107	124	122	241	240	247	169	172	163	113	39	**1,880**
Ontario	0	0	0	0	842	955	1,024	963	1,073	1,059	1,156	1,124	1,133	998	**10,327**
Québec	0	69	77	105	105	113	109	109	110	99	123	122	102	-	**1,243**
Total	**15**	**123**	**184**	**229**	**1,116**	**1,245**	**1,464**	**1,416**	**1,526**	**1,433**	**1,513**	**1,474**	**1,400**	**1,063**	**14,201**

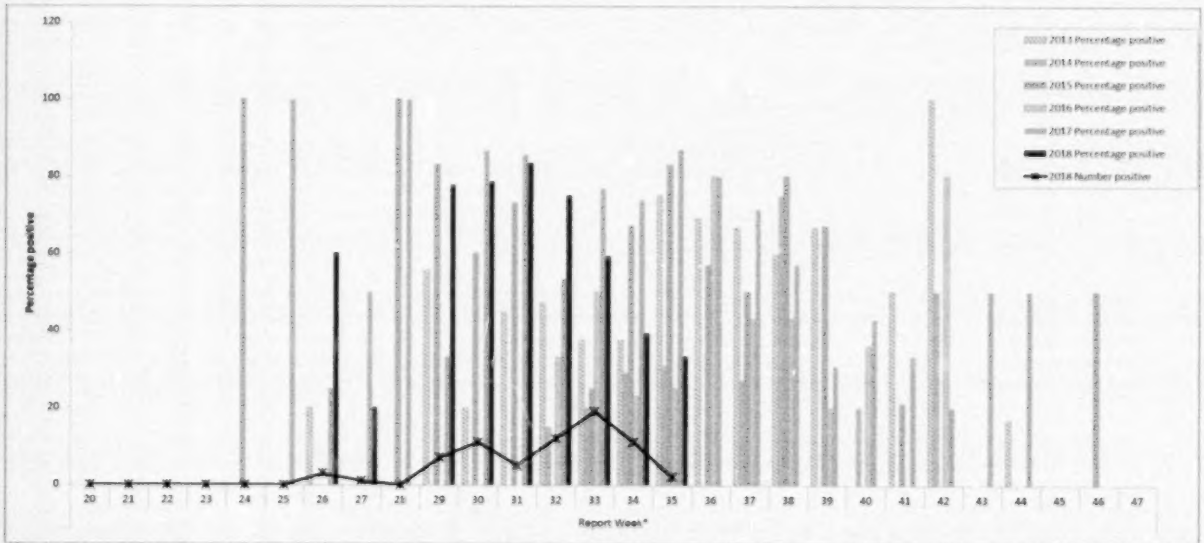
† Detailed West Nile Virus mosquito surveillance data can be accessed through provincial/territorial websites.

FIGURE 4: Number of WNV positive dead wild birds in Canada by report week, 2018*



* Not all provinces conduct dead wild bird surveillance as part of their respective WNV surveillance program. However, WNV positive dead wild birds may be identified through the National Wildlife Disease Surveillance Program, CWHC or some provinces.

FIGURE 5: Percentage of dead wild birds positive for WNV by report week in 2012-2018 and number of dead birds positive in Canada by report week, 2018*



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